

Remarks

Status of The Claims

Claims 1-6, 11-14, 16-18, 23, and 24 are currently amended.

Claims 15, 19-22, and 25-27 are canceled.

Claims 28-33 are new.

Support for new claims 28-33 is in originally filed claim 1 and in Examples 7-12. With the present amendments, claims 1-14, 16-18, 23, 24, and 28-33 are currently pending in this application.

Response To Election/Restrictions

In an Office Action mailed September 14, 2007, the Examiner restricted the invention under 35 U.S.C. § 121 and § 372 into five groups, I-V. According to the Examiner, the inventions in Groups I-V do not relate to a single general inventive concept under PCT Rule 13.1 because they lack the same or corresponding special technical features. In addition, the Examiner has further restricted the inventions in Groups I and IV according to the nucleotide sequences that fall within Groups I and IV. Groups I-V are as follows:

Group I. Claims 1-14, 16, and 23, drawn to a method to reduce transgene silencing in transgenic plants; an artificial polynucleotide molecule selected from the group consisting of SEQ ID NOS:3, 4, 6, 7, 10, 13, 14, 27, 18, 21, 22, and 35; a DNA construct comprising a promoter operably linked to said molecule; a plant cell or plant comprising said construct.

Group II. Claim 15, drawn to a method of detecting an artificial polynucleotide in a plant cell, comprising contacting a DNA sample from the cell with a DNA molecule that comprises at least one DNA molecule of a pair of DNA molecules that when used in a nucleic acid amplification reaction produces an amplicon.

Group III. Claims 17-22, drawn to a DNA molecule selected from the group consisting of SEQ ID NOS:24, 25, 26, and 27, a plant cell or plant comprising said DNA molecule.

Group IV. Claim 25, drawn to a method of detecting the presence of an artificial polynucleotide encoding a glyphosate resistant EPSPS in a DNA sample, the method comprising extracting a DNA sample from a plant and contacting the sample with a labeled DNA molecule of sufficient length to be specifically homologous or complementary to an artificial polynucleotide selected from the group consisting of SEQ ID NOS:3, 4, 6, 7, 10, 13, 14, 17, 18, 21, 22, and 35, subjecting the sample labeled DNA molecule to stringent hybridization conditions.

Group V, claims 26-27, drawn to an isolated polynucleotide encoding an EPSPS enzyme comprising motif SEQ ID NO:34, and a plant cell or plant comprising said EPSPS enzyme.

The Examiner must have inadvertently left claim 24 out of Group I. As Group I encompasses claim 23 also directed to a kit, Applicants considers that claim 24 falls within the same group.

Election

In response, Applicants elect with traverse to pursue Group I, claims 1-14, 16, and 23-24. Applicants also elect to pursue SEQ ID NO:18, which is polynucleotide sequence of an artificial EPSPS from *Agrobacterium* strain CP4 modified using the *Zea mays* codon usage table and the methods of the present invention. Applicants present the following grounds for traversal.

Grounds For Traversal

The current invention pertains to a method of reducing transgene silencing in transgenic plants by employing artificial polynucleotide sequences designed such as they are less than 85% identical to a known polynucleotide and have no stretch of more than 23 nucleotides of 100% identity to the known polynucleotide. This method of reducing transgene silencing can be employed using a multitude of nucleotide sequences. The disclosure gives several examples of such nucleotide sequences, namely, EPSPS genes, bar genes, chloroplast transit sequences, etc.

Moreover, for each these, the disclosure teaches several species such as the EPSPS gene from each of maize, rice, soybean, *Agrobacterium*, etc. Furthermore, for every EPSPS species, the disclosure teaches subspecies such as the artificial maize EPSPS gene modified using different codon usage tables. Therefore, the EPSPS artificial sequences of the present invention, namely, SEQ ID NOS:3, 4, 7, 10, 17, and 18 should be considered as related species that can be employed by the generic method of reducing EPSPS transgene silencing in transgenic plant. Applicants amend the current set of claims so as to pertain to EPSPS subspecies and, as such, request that the artificial EPSPS polynucleotides, SEQ ID NOS: 3, 4, 7, 10, 17, and 18, be searched together.

The set of claims as currently amended all relate to a single general inventive concept under PCT Rule 13.1. The inventive concept is a method of reducing transgene silencing. As currently amended, the claims pertain to such a method, as well as the EPSPS artificial polynucleotides employed by such method, and the plant cells and kits comprising the EPSPS artificial polynucleotides. Accordingly, Applicants respectfully request that a search be done on the methods of the current invention as well as the EPSPS artificial polynucleotides species and subspecies denoted as SEQ ID NO:3, 7, 4, 10, 17, and 18.

As restricted by the Examiner, claim 16 falls within Group I, whereas claims 17 and 18 fall within Group III. Applicants herewith amend claims 17-18 to depend on claim 16. Claim 16 is directed to a DNA molecule that hybridizes to an EPSPS artificial polynucleotide, such as SEQ ID NOS:17 and 18. SEQ ID NO:24 and SEQ ID NO:25 are fragments of SEQ ID NO:17 and, as such, hybridize with SEQ ID NO:17. Similarly, SEQ ID NO:26 and SEQ ID NO:27 are fragments of SEQ ID NO:18 and hybridize with SEQ ID NO:18. The search for these fragments in addition to the artificial EPSPS polynucleotides encompassing these fragments should not

constitute a search burden on the Examiner. Accordingly, Applicants respectfully request that claims 17 and 18 of Group III be searched with the claims of Groups I.

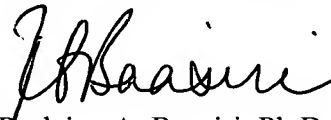
Applicants respectfully request that new claims 28-33 be examined with Group I. New claims 28 and 30-33 are dependent on claim 1, which was restricted by the Examiner to Group I. These claims are directed to methods of gene silencing employing the artificial EPSPS polynucleotides taught by the disclosure. New claim 29 is directed to a method of gene silencing and is dependent on claim 10, which was also restricted by the Examiner to Group I. Therefore, Applicants request that claims 1-14, 16-18, 23, 24, and 28-33 be searched together.

Applicants also reserve the right to file one or more divisional applications directed to the non-elected subject matter.

Fees

A request for a one-month extension of time and the authorization for the associated fee are filed concurrently with this paper. Should any additional fees under 37 C.F.R. §§ 1.16-1.21 be required for any reason relating to the enclosed materials, the Commissioner is hereby authorized to deduct any additional fees from Howrey LLP Deposit Account 08-3038/11899.0235.PCUS00.

Respectfully submitted,



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